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10/787,074

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Michele C. Clayton

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11/05/2008

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EXAMINER

ZHOU, YONG

ART UNIT

PAPER NUMBER

2419

NOTIFICATION DATE

DELIVERY MODE

11/05/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/787,074 | <b>Applicant(s)</b><br>CLAYTON, MICHELE C. |  |
|                              | <b>Examiner</b><br>Yong Zhou         | <b>Art Unit</b><br>2419                    |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6, 9-13, 15, 16, 18-24, 26, 27 and 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 9-13, 15, 16, 18-24, 26, 27 and 29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/27/2008</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Objections*

1. Claim 6 is objected to because of the following:

**Claim 6** is dependent on a canceled claim 5. It is believed that claim 6 was intended to depend on claim 4. It has been treated as such for the remainder of this Office Action.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 6, 9, 11-13, 15-16, 18-24, 26-27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Kracht, James E. (US 6,377,987), referred to hereinafter as Kracht.

**Regarding claims 1, 11, 19 and 22**, Kracht teaches operations of:

generating local topology information including information on local interfaces in a local device and remote interfaces in at least one downstream remote device that connect to the local interfaces identified in the local topology information, wherein the at

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least one downstream remote device comprises an end device or expander connecting to further end devices or expanders to which the local interfaces connect (Fig. 8, col. 3, lines 52-66, col. 8, lines 10-11, col. 10, lines 29-42, wherein a method for determining a physical topology of a network comprise steps of discovering a plurality of devices that are located in the network based on each address within a set of network addresses and creating and storing information representing the plurality of devices; determining possible neighboring devices for each device in the plurality of devices; processing the configuration information to create information representing neighboring devices and each link between them; and creating and storing information that represents the topology based on the gathered information);

for each connected remote interface, determining a device type of the downstream remote device including the remote interface (col. 5, lines 29-30, col. 7, lines 27-34, col. 8, lines 9-11, wherein the device type is determined); and

for each local interface attached to one remote interface in one of the downstream remote devices whose determined device type is of a specified device type, initiating communication with the remote interface to access remote topology information from the downstream remote device indicating downstream devices attached directly and indirectly to the remote device, wherein the downstream devices with respect to the remote device comprise an end device or expander connecting to further end devices or expanders to which the remote device connects (Fig. 8, col. 3, lines 52-66, col. 4, lines 8-9, col. 8, line 64 through col. 9, line 7, wherein once the

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device type is identified, the discovery mechanism sends a request message to the device to gather additional information).

**Regarding claims 11 and 19**, Kracht further teaches a system in communication with at least one remote device, wherein each remote device includes at least one remote interface and remote topology information, comprising:

at least one local interface (Fig. 10, #1020);

circuitry integrated with the motherboard capable of causing operations (of method 1) to be performed (col. 18, lines 11-13);

**Regarding claim 19**, Kracht further teaches a motherboard (computer system, Fig 10, #1000).

**Regarding claim 4**, Kracht further teaches:

receiving at the remote device a request for the remote topology information from the local device (col. 9, lines 4-7, col. 10, lines 35-39, wherein a request message is sent to the each device of known type to obtain its configuration information);

determining at the remote device whether the remote topology information is completed, wherein the remote topology information is completed if the remote topology information indicates information on downstream devices to which the remote device is directly and indirectly connected (col. 3, lines 63-66, col. 4, lines 4-9, col. 11, lines 10-11, col. 17, lines 26-27, wherein the topology is generated based on the configuration information collected); and

transmitting the remote topology information to the local device in response to determining that the remote topology information is completed (col. 10, lines 35-39, col.

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15, lines 46-52, wherein the discovery mechanism obtains configuration information from the device).

**Regarding claim 16**, Kracht teaches the same operations as in claim 4.

Kracht further teaches a system in communication with at least one remote device and one upstream device, wherein each remote device includes at least one remote interface and remote topology information, comprising:

at least one local interface (Fig. 10, #1020);

circuitry capable of causing the operations to be performed (col. 18, lines 11-13).

**Regarding claim 27**, Kracht teaches the same operations as in claim 4.

Therefore, it is rejected for the same reasons.

**Regarding claims 2, 12, 20 and 23**, Kracht teaches all limitations of claims 1, 11, 19 and 22, respectively.

Kracht further teaches merging the local topology information with the remote topology information (col. 17, lines 26-27).

**Regarding claims 3, 13, 21 and 24**, Kracht teaches all limitations of claims 1, 11, 19 and 22, respectively.

Kracht further teaches that the specified device type comprises an expander (hub or switch, col. 8, lines 10-11).

**Regarding claims 6, 18 and claims 29**, Kracht teaches the all the limitations of claims 4, 16 and 27, respectively.

Kracht further teaches that the remote topology information is completed in response to completing:

determining the device type of at least one additional device to which the remote device connects (col. 5, lines 29-30);

receiving additional topology information from the at least one additional device to which the remote device connects that is of the specified device type (col. 11, lines 7-10); and

merging the received additional topology information with the remote topology information (col. 17, lines 26-27).

**Regarding claims 9, 15 and 26**, Kracht teaches all limitations of claims 1, 11 and 22, respectively.

Kracht further teaches that the remote topology information includes an entry for devices to which the remote device including the completed topology information connects directly or indirectly, wherein each entry indicates a first address and first interface of a first device, a second address and second interface of a second device connected directly to the first device, and a device type of the second device, wherein the remote device including the remote topology information connects directly or indirectly to all first and second devices identified in the remote topology information (Fig. 7, #746, #748, #750).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kracht in view of Robert Elliott (editor) ("Information Technology – Serial Attached SCSI (SAS)", Project T10/1562-D, Revision 5, July 9, 2003), hereinafter referred to as Elliott.

**Regarding claim 10**, Kracht teaches the limitations of claim 1.

Kracht does not specifically teach that the devices comprise SAS devices and wherein the interfaces comprise SAS PHYs, and wherein each device in the topology has a unique SAS address.

Elliott teaches that the devices comprise SAS devices (p10, sec. 3.1.107, 1<sup>st</sup> line and wherein the interfaces comprise SAS PHYs (p10, sec. 3.1.112, 1<sup>st</sup> line), and wherein each device in the topology has a unique SAS address (p10, sec. 3.1.106, 1<sup>st</sup> line).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the device in Kracht with SAS device taught by Elliott to achieve the predictable result of identifying devices in network topology.

***Response to Arguments***

6. Applicant's arguments, July 30, 2008 have been fully considered but they are not persuasive.

Regarding claims 1, 11, 19 and 22, Applicant argues that nowhere in Kracht is there any disclosure or mention of the claim requirement that for each local interface



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attached to one remote interface in one of the downstream remote devices whose determined device type is of a specified device type and that communication is initiated to obtain remote topology information from the downstream remote device Applicant further argues that nowhere is there any disclosure that a device receives remote topology information from an attached downstream remote device indicating downstream devices attached directly and indirectly to the remote device. In response, the Examiner respectfully disagrees with Applicant's arguments. Kracht teaches a method for determining a physical topology of a network comprise steps of discovering a plurality of devices that are located in the network based on each address within a set of network addresses and creating and storing information representing the plurality of devices; determining possible neighboring devices for each device in the plurality of devices; processing the configuration information to create information representing neighboring devices and each link between them; and creating and storing information that represents the topology based on the gathered information. Kracht also teaches determining the type of the device and initiating the communication to the device to obtain the configuration information (Fig. 8, col. 3, lines 52-66, col. 4, lines 8-9, col. 5, lines 29-30, col. 7, lines 27-34, col. 8, lines 9-11 and line 64 through col. 9, line 7, col. 10, lines 29-42).

Regarding claims 4, 16 and 27, Applicant argues that there is no disclosure or mention of in response to a request for remote topology information, determining at the remote device whether the remote topology information is completed and transmitting the remote topology information to the local device in response to determining that the

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remote topology information is completed. In response, the Examiner respectively disagrees with Applicant's arguments. Kracht teaches that a request message is sent to the each device of known type to obtain its configuration information and the topology is generated based on the configuration information collected (col. 3, lines 63-66, col. 4, lines 4-9, col. 9, lines 4-7, col. 10, lines 35-39, col. 11, lines 10-11, col. 15, lines 46-52, col. 17, lines 26-27).

Therefore, in view of the above reasons, the Examiner maintains the rejections.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong Zhou whose telephone number is 571-270-3451. The examiner can normally be reached on Monday - Friday 8:00am - 5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag G. Shah can be reached on 571-272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yong Zhou

/Chirag G Shah/

Supervisory Patent Examiner, Art Unit 2419